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# PRECIPITATION IN TENNESSEE RIVER BASIN

ANNUAL 1974

## SUMMARY

(All Figures are in Inches)

### AVERAGE PRECIPITATION

Above Chattanooga	(51.11)	58.98
Below Chattanooga	(52.10)	62.08
Entire Basin	(51.58)	60.41

### MOST RAIN

Coweeta No. 31, NC	(93.21)	111.05
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### LEAST RAIN

Kentucky Dam, KY	(42.32)	36.54
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### HIGHEST 24-HOUR RAIN

Mint, TN		6.86
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### NATURAL STREAMFLOW

Above Knoxville	(19.62)	27.44
Above Chattanooga	(23.66)	30.29

Number in parentheses is long-term mean.

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**TENNESSEE VALLEY AUTHORITY**  
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# PRECIPITATION IN TENNESSEE RIVER BASIN

ANNUAL 1974

## CONTENTS

	<u>Page</u>
Isohyetal Map 1974 Annual Precipitation	Frontispiece
Precipitation	1
Snow	2
Streamflow	2
Evaporation	3
Temperatures	3
Intense Rainfall	3
Monthly Reports	3
Special Reports	3
Map of Average Precipitation on Watershed Subdivisions	11
Rainfall and Runoff in Tennessee River Basin—Chart	12
Index Map to Rainfall Stations, follows page 15	

## TABLES

1974 Annual Precipitation at Ten Wettest and Ten Driest Stations	2
Annual Natural Streamflow in Inches	3
Annual Maximum Rainfall Intensities, 1936–1974	5
Tennessee River Basin Precipitation During 1974	6
Precipitation Statistics for Selected Stations	6
Average Precipitation on Watershed Subdivisions	10
Monthly and Annual Rainfall and Runoff Above Chattanooga	13
Rainfall and Runoff Data for Selected Gaged Watersheds	14
Evaporation Data	15
Monthly and Annual Precipitation	21

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PRECIPITATION  
IN  
TENNESSEE RIVER BASIN

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REPORT NO. 0-243-A74

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## PRECIPITATION IN TENNESSEE RIVER BASIN

### ANNUAL 1974

#### Precipitation

The year 1974 was the seventh wettest over the Tennessee River Basin in 85 years of record. Rainfall averaged 60.41 inches, 8.83 inches higher than the 75-year (1890-1964) mean of 51.58 inches. Average precipitation has ranged from 37.86 inches in 1941 to 65.10 inches in 1973. The wettest consecutive three-year period of record was 1972, 1973, and 1974, with annual rainfall averaging 62.65 inches. Average precipitation above and below Chattanooga during 1974 was 58.98 inches and 62.08 inches, respectively, 7.87 and 9.98 inches higher than the long-term means. These amounts are listed in the summary on the cover of this report. The frontispiece map shows the 1974 annual distribution of precipitation over the Basin.

The index map following page 15 shows the station locations, and Tables 1 through 10 on pages 21 to 59 show monthly and annual precipitation for stations listed in upstream order.

Monthly precipitation over the Basin was above the 75-year mean during nine months of the year; only March, July, and October had total precipitation below the mean. The driest month, October, had 1.83 inches of rain. January was the wettest month with 9.66 inches.

The maximum annual precipitation during 1974, 111.05 inches, was reported at Station #200F, Coweeta, North Carolina, in the upper Little Tennessee River watershed. This amount is 17.84 inches higher than the long-term mean of 93.21 inches at this station. Mt. Le Conte, Tennessee, with 100.72 inches, was the only other station to exceed 100 inches of precipitation.

The maximum monthly precipitation at an individual station, 15.91 inches in January, fell at Tullahoma, Tennessee, in the Upper Duck River watershed. The highest precipitation in a 24-hour period at any station during the year was 6.86 inches in May at Mint, Tennessee, in the Lower Little Tennessee River watershed.

The minimum annual precipitation in the Basin during 1974, 36.54 inches, fell at Kentucky Dam, Kentucky, and is 5.78 inches lower than the long-term mean. The minimum monthly precipitation was 0.40 inch in June at the Frankfort, Tennessee, radio gage in the Emory River watershed.

The 10 highest and lowest amounts recorded in the Tennessee River Basin during the year are listed in the following table:



1974 ANNUAL PRECIPITATION  
AT 10 WETTEST AND 10 DRIEST STATIONS  
IN THE TENNESSEE RIVER BASIN

<u>Highest Amounts</u>		<u>Lowest Amounts</u>	
<u>Station</u>	<u>1974 Annual Precipitation inches</u>	<u>Station</u>	<u>1974 Annual Precipitation inches</u>
Coweeta No. 31, N. C.	111.05	Kentucky Dam, Ky.	36.54
Mt. Le Conte, Tenn.	100.72	Chambers Mountain, N. C.	41.80
Highlands, N. C.	92.10	Asheville, N. C.	42.67
Clingmans Dome, N. C.	88.20	Parker Branch, N. C.	42.86
Laurel Mountain, N. C.	87.60	Marion Evaporation Sta., Va.	43.03
Stratton Meadows, N. C.	86.80	Groseclose, Va.	43.09
Mt. Mitchell, N. C.	86.07	Canton, N. C.	43.40
Glade Gap, N. C.	85.12	Waynesville Watershed No. 5, N. C.	44.93
Gloucester Gap, N. C.	84.08	Nickajack Gap, Ga.	45.56
Haywood Gap, N. C.	84.01	Trade, Tenn.	45.70

Among the watershed subdivisions, the maximum annual average precipitation was 79.1 inches over the Nantahala River area above Nantahala, North Carolina, 12.0 inches higher than the 30-year mean. The minimum annual average, 49.9 inches, fell over the North Fork Holston River area above Gate City, Virginia, 8.0 inches higher than the 30-year mean.

Precipitation and runoff data for the year above gaging sites on 14 selected watersheds are shown on page 14. Other tabulations and charts on pages 12 and 13 show selected data on precipitation and runoff.

### Snow

Snowfall over the Basin ranged from less than an inch at some locations up to almost 80 inches in the eastern mountains. Highest amounts of snow fell in December; smaller amounts fell in February, March, and November. During January, April, and October, scattered small amounts were reported at the higher elevations.

In the eastern part of the Basin, snowfall averaged about 7 inches with the mountainous areas of the northeast getting the highest amounts. The maximum for the year, 78.4 inches, was reported at Mt. Le Conte, Tennessee; Banner Elk, North Carolina, had 50 inches. In the western part of the Basin, snowfall averaged 1 to 2 inches, with Sewanee, Tennessee, reporting 7 inches. In the Caney Fork basin above Great Falls Dam, snowfall ranged from less than an inch at some stations to 12.5 inches at Monterey.

### Streamflow

Streamflow from the Basin above Chattanooga in 1974 was above normal during January, February, April, May, June, and December; near normal during March, August, September, and November; and below normal during July and October.

Streamflow from the Tennessee River watershed above Chattanooga and above Knoxville and a comparison with the long-term means are shown on the cover and in the following table:

ANNUAL NATURAL STREAMFLOW IN INCHES - 1974

	<u>Water Year</u>		<u>Calendar Year</u>	
	<u>1974</u>	<u>Mean</u>	<u>1974</u>	<u>Mean</u>
Tennessee River at				
Knoxville	28.00	19.61	27.44	19.62
Chattanooga	32.78	23.66	30.29	23.66

Other tabulations and charts on pages 12, 13, and 14 show rainfall-runoff data for selected watersheds and comparisons with past records.

Evaporation

Data observed at the TVA evaporation stations are shown in the table on page 15.

Temperatures

Air temperatures over the Basin averaged below normal during six months of the year. In February, March, November, and December temperatures were about normal, and in January and March far above normal. The remainder of the months were below normal. Air temperatures for the entire Basin averaged about normal for the year.

Intense Rainfall

Maximum rainfall intensities for periods of 1, 3, 6, 12, and 24 hours for the years 1936-1974 are shown in a table on page 5. 1974 intensities did not exceed previous maximum amounts.

Monthly Reports

Monthly issues of the bulletin "Precipitation in Tennessee River Basin" contain tabulations of daily precipitation at stations located in or near the Basin together with isohyetal maps of monthly precipitation, maps showing mean monthly precipitation on watershed subdivisions, descriptions of storms, tabulations of rainfall and runoff on selected watersheds, intense rainfall data, and other information.

Special Reports

Reports on special storm investigations were included in monthly issues of this publication during 1974. These reports and the date of the issue in which they appear are as follows:

Monthly Bulletin  
Containing Report

Ice Storm of January 2-3, 1974, in the Western Tennessee  
Valley Area  
Storm and Floods of January 8-11, 1974, in the Tennessee  
River Basin  
High Winds of January 28, 1974, in East Tennessee  
Tornadoes of April 1, 1974, in North Alabama and Middle  
Tennessee  
Tornadoes of April 3, 1974, in Tennessee River Basin  
Floods of April 4, 1974, at Mountain City, Tennessee  
Tornadoes of April 8, 1974, in Lexington and Athens, Tennessee  
Intense Rainfall of May 30, 1974, in Blount County, Tennessee  
Hailstorm of June 28, 1974, in Vicinity of Asheville, North  
Carolina  
Storm of November 20, 1974, at Lenoir City, Tennessee

January

January

January

April

April

April

April

May

June

November



# ANNUAL MAXIMUM RAINFALL INTENSITIES

## IN TENNESSEE RIVER BASIN

1936-1974

Each tabular value shows maximum rainfall in inches occurring within the time period shown at head of the column. The number in parentheses is the station where this occurred.

Year	Inches for				
	1 Hour	3 Hours	6 Hours	12 Hours	24 Hours
1936	3.00 (34)	4.79 (60)	5.62 (60)	6.90 (60)	8.85 (60)
1937	2.64 (90)	3.70 (29)	4.40 (70)	6.16 (283)	7.68 (283)
1938	2.61 (179)	3.77 (101)	6.78 (179)	7.91 (179)	9.10 (179)
1939	3.52 (207)	6.81 (24)	6.81 (24)	6.81 (24)	8.57 (397)
1940	3.08 (142)	4.00 (190)	6.12 (190)	9.02 (190)	11.60 (115)
1941	3.65 (391)	3.87 (470)	3.98 (42)	4.00 (50)	5.23 (563)
1942	2.95 (520B)	4.80 (419)	4.80 (419)	5.79 (283)	9.53 (285)
1943	3.19 (275)	4.36 (275)	4.75 (58)	4.88 (275)	6.70 (566)
1944	4.88 (505)	8.06 (505)	8.16 (505)	8.21 (505)	8.36 (505)
1945	2.45 (503)	4.03 (605)	4.43 (521)	6.24 (154)	7.65 (154)
1946	2.89 (651)	3.92 (403)	5.30 (403)	6.53 (505)	7.57 (384)
1947	2.41 (101)	5.82 (538)	5.82 (538)	5.82 (538)	5.82 (538)
1948	2.70 (283)	4.00 (15)	4.41 (446)	5.73 (191)	7.30 (509)
1949	3.55 (679)	4.57 (488)	5.72 (254)	7.67 (254)	9.94 (233A)
1950	2.60 (327)	3.53 (69)	4.63 (233A)	6.23 (233A)	9.20 (233A)
1951	4.00 (210)	4.80 (407)	4.80 (407)	6.25 (109)	7.34 (111)
1952	3.83 (575)	4.85 (575)	5.70 (575)	6.76 (575)	7.54 (115)
1953	3.10 (691)	4.65 (153)	4.65 (153)	4.93 (233A)	6.90 (200C)
1954	3.58 (154)	4.29 (438)	5.52 (438)	8.87 (393)	8.87 (393)
1955	3.18 (704A)	3.72 (255)	4.61 (154)	6.25 (233A)	8.56 (462A)
1956	3.00 (381)	4.73 (682)	4.73 (682)	4.73 (682)	7.53 (17A)
1957	3.51 (385)	3.75 (738)	4.70 (268)	5.05 (190)	7.60 (190)
1958	3.00 (135)	3.97 (522)	5.49 (135)	5.49 (135)	6.51 (109)
1959	3.50 (506)	6.34 (506)	6.34 (506)	6.34 (506)	8.7 (742)
1960	3.43 (711)	7.34 (711)	7.45 (711)	7.45 (711)	7.45 (711)
1961	2.58 (624)	3.50 (249)	3.66 (575)	5.63 (286)	10.19 (279A)
1962	3.52 (75)	4.54 (276B)	4.54 (276B)	5.30 (277)	7.43 (191)
1963	3.45 (762C)	6.95 (382A)	6.95 (382A)	7.27 (581)	7.57 (762A)
1964	2.44 (788)	3.50 (462)	4.55 (201A)	6.10 (280)	*13.10 (286)
1965	3.10 (228)	5.65 (169)	5.65 (169)	5.65 (169)	11.52 (190)
1966	3.80 (662)	5.05 (662)	5.75 (662)	5.78 (662)	8.47 (283)
1967	3.33 (816)	4.65 (111)	6.40 (115)	6.40 (115)	12.14 (135)
1968	*5.50 (F1)	*8.80 (F1)	*11.13 (F1)	*11.13 (F1)	11.13 (F1)
1969	2.90 (813)	6.17 (800)	6.92 (800)	6.99 (800)	7.05 (800)
1970	4.50 (B17)	7.60 (286B)	9.39 (286B)	9.80 (286B)	10.89 (286)
1971	4.00 (43)	4.40 (43)	4.60 (624)	5.63 (361)	7.08 (715A)
1972	3.50 (293)	5.35 (663A)	5.86 (663A)	6.40 (254)	10.25 (733)
1973	3.40 (789)	5.66 (789)	5.90 (789)	7.50 (43)	9.10 (286 & F1)
1974	3.24 (283A)	3.35 (756)	6.63 (175)	6.63 (175)	6.86 (175)

\*Maximum of record

TENNESSEE RIVER BASIN PRECIPITATION DURING 1974

Precipitation in Inches

<u>Month</u>	<u>Above Chattanooga 1974</u>	<u>Below Chattanooga 1974</u>	<u>Tennessee River Basin</u>			
			<u>1974</u>	<u>75-Yr Mean</u>	<u>Deviation from Mean</u>	
					<u>Monthly</u>	<u>Cumulative</u>
January	8.54	10.94	9.66	4.88	+4.78	+4.78
February	5.61	5.41	5.51	4.84	+0.67	+5.45
March	5.40	4.07	4.78	5.61	-0.83	+4.62
April	4.91	4.61	4.77	4.48	+0.29	+4.91
May	7.44	6.84	7.16	4.08	+3.08	+7.99
June	3.56	5.51	4.47	4.24	+0.23	+8.22
July	3.47	3.29	3.38	4.91	-1.53	+6.69
August	4.78	4.69	4.74	4.17	+0.57	+7.26
September	3.58	4.11	3.82	3.20	+0.62	+7.88
October	1.93	1.70	1.83	2.84	-1.01	+6.87
November	4.08	4.43	4.24	3.57	+0.67	+7.54
December	5.68	6.48	6.05	4.76	+1.29	+8.83
Total	58.98	62.08	60.41	51.58		

Mean precipitation figures are for the period 1890-1964.

PRECIPITATION STATISTICS FOR SELECTED STATIONS

Precipitation in Inches

<u>Month</u>	<u>Long-Term</u>	<u>Maximum of Record</u>		<u>Minimum of Record</u>		<u>Year</u> 1974
	<u>Mean</u>	<u>Amount</u>	<u>Year</u>	<u>Amount</u>	<u>Year</u>	
<u>ELIZABETHTON, TENNESSEE (83 Years)</u>						
January	3.45	8.13	1947	0.46	1896	6.51
February	3.42	7.59	1944	0.46	1968	4.52
March	4.19	10.72	1899	1.37	1937	5.84
April	3.45	6.05	1912	0.65	1942	4.44
May	4.01	7.73	1915	1.08	1941	6.40
June	4.55	16.38	1872	1.33	1946	5.15
July	5.12	10.56	1896	1.10	1872	3.02
August	4.26	12.14	1901	0.89	1896	3.37
September	2.95	7.61	1928	0.30	1903	4.20
October	2.59	7.61	1918	0.02	1904	1.96
November	2.46	5.02	1948	0.61	1931	3.28
December	3.34	9.87	1872	0.30	1965	4.27
Annual	43.79	58.91	1928	29.06	1941	52.96

PRECIPITATION STATISTICS FOR SELECTED STATIONS (Continued)Precipitation in Inches

<u>Month</u>	<u>Long-Term Mean</u>	<u>Maximum of Record Amount</u>	<u>Year</u>	<u>Minimum of Record Amount</u>	<u>Year</u>	<u>Year 1974</u>
<u>MURPHY, NORTH CAROLINA (100 Years)</u>						
January	5.58	14.85	1882	1.75	1907	9.88
February	5.65	15.10	1873	0.56	1906	6.34
March	6.19	15.34	1917	1.62	1967	3.34
April	4.85	15.40	1874	0.30	1915	7.28
May	4.05	11.25	1929	0.46	1941	6.44
June	4.87	9.31	1884	0.94	1964	2.26
July	5.69	13.42	1950	0.89	1957	5.44
August	4.99	13.96	1920	0.95	1953	7.62
September	3.33	8.04	1962	0.20	1876	1.72
October	3.04	9.27	1949	0.00	1963	1.34
November	3.82	13.18	1948	0.51	1924	4.40
December	5.20	12.98	1932	0.48	1965	6.89
Annual	57.26	84.80	1875	40.00	1940	62.95
<u>CHATTANOOGA, TENNESSEE (96 Years)</u>						
January	5.27	14.74	1882	1.13	1961	8.00
February	5.03	12.30	1939	0.62	1941	5.68
March	5.89	14.05	1899	0.93	1910	3.44
April	4.64	15.29	1911	0.44	1942	3.09
May	3.89	12.00	1929	0.54	1941	6.53
June	3.96	9.40	1949	0.29	1931	1.19
July	4.71	13.49	1916	0.20	1957	4.74
August	3.77	12.36	1920	0.45	1929	6.10
September	3.17	12.19	1957	0.04	1919	1.30
October	2.99	11.91	1925	0.08	1938	1.71
November	3.62	13.59	1948	0.16	1890	5.04
December	5.15	13.68	1961	0.44	1889	4.51
Annual	52.09	72.37	1929	32.68	1904	51.33
<u>LEWISBURG, TENNESSEE (81 Years)</u>						
January	5.20	17.05	1950	1.26	1943	11.07
February	5.03	13.14	1939	1.08	1941	4.58
March	5.91	15.94	1973	0.94	1910	4.71
April	4.60	12.60	1912	0.56	1915	3.77
May	4.26	12.01	1967	0.60	1941	6.34
June	3.97	13.46	1900	0.72	1899	6.62
July	4.59	9.85	1941	0.84	1954	1.72
August	3.89	11.40	1923	0.57	1909	2.95
September	3.20	12.41	1957	0.32	1927	5.89
October	2.98	8.88	1919	T	1963	1.96
November	3.82	10.27	1948	0.46	1953	4.74
December	4.91	11.71	1922	0.77	1958	5.97
Annual	52.36	70.82	1973	37.42	1904	60.32

PRECIPITATION STATISTICS FOR SELECTED STATIONS (Continued)Precipitation in Inches

<u>Month</u>	<u>Long-Term Mean</u>	<u>Maximum of Record Amount</u>	<u>Year</u>	<u>Minimum of Record Amount</u>	<u>Year</u>	<u>Year 1974</u>
<u>MUSCLE SHOALS, ALABAMA* (91 Years)</u>						
January	5.15	13.09	1950	1.20	1961	11.77
February	5.00	13.64	1948	0.54	1941	4.88
March	5.81	16.15	1897	1.26	1910	4.39
April	4.62	16.07	1892	0.74	1930	2.70
May	4.03	11.29	1939	0.16	1941	6.94
June	4.01	13.87	1900	0.60	1897	4.11
July	4.53	14.60	1916	0.77	1935	3.85
August	3.72	10.60	1894	0.35	1948	2.67
September	3.07	7.87	1890	0.00	1897	7.32
October	2.64	11.05	1918	0.00**	1963	1.58
November	3.52	11.39	1948	0.16	1949	4.40
December	5.05	14.59	1926	0.83	1958	6.84
Annual	51.15	76.21	1932	30.92	1943	61.45

\*Before December 1940 this station was at Florence, Alabama.

\*\*Also occurred in October 1924.

JOHNSONVILLE STEAM PLANT, TENNESSEE\* (91 Years)

January	5.23	23.51	1937	0.44	1963	8.21
February	4.25	9.56	1939	0.73	1968	2.79
March	5.18	13.07	1927	0.59	1910	2.43
April	4.65	12.29	1892	0.53	1887	6.47
May	4.29	10.19	1909	0.48	1951	3.88
June	4.05	13.34	1928	0.37	1930	7.32
July	4.10	13.33	1972	0.06	1890	3.67
August	3.84	13.70	1914	0.34	1948	7.13
September	3.38	11.31	1921	0.00	1897	3.62
October	2.75	11.44	1919	0.00	1963	1.58
November	4.13	11.90	1906	0.74	1949	4.60
December	4.57	14.66	1926	0.05	1889	2.52
Annual	50.42	76.17	1950	32.48	1960	54.22

\*Before August 1949 records collected at Johnsonville have been used.

PRECIPITATION STATISTICS FOR SELECTED STATIONS (Continued)Precipitation in Inches

<u>Month</u>	<u>Long-Term Mean</u>	<u>Maximum of Record Amount</u>	<u>Year</u>	<u>Minimum of Record Amount</u>	<u>Year</u>	<u>Year 1974</u>
<u>HENDERSONVILLE, NORTH CAROLINA (78 Years)</u>						
January	4.54	12.40	1906	0.39	1907	4.46
February	4.63	10.73	1891	0.54	1930	3.97
March	5.39	11.67*	1952	0.96	1930	4.90
April	4.32	9.38	1920	0.43	1915	5.98
May	4.49	12.70	1942	0.95	1914	4.82
June	5.24	11.56	1934	0.96	1911	4.63
July	5.95	22.09	1916	1.72	1957	5.64
August	6.07	26.58	1901	0.49	1925	8.31
September	4.39	14.00	1906	0.22	1919	4.16
October	4.26	14.59	1918	0.01	1904	1.49
November	3.40	12.54	1948	0.21	1910	4.50
December	5.02	12.85	1918	0.23	1965	2.92
Annual	57.70	92.60	1901	32.55	1925	55.78

\*Also occurred in March 1891.

KNOXVILLE, TENNESSEE (104 Years)

January	4.67	16.98	1882	1.29	1907	8.42
February	4.66	12.52	1873	0.56	1898	5.31
March	5.14	13.35	1917	0.72	1910	5.97
April	4.21	17.32	1874	0.70	1942	3.83
May	3.81	8.81	1938	0.71	1941	7.60
June	4.15	11.83	1928	1.39	1936	2.49
July	4.56	13.16	1917	0.69	1901	1.54
August	3.83	11.33	1920	1.10	1953	2.80
September	2.88	10.78	1944	0.18	1961	4.22
October	2.61	9.51	1925	0.00	1963	2.01
November	3.41	11.69	1948	0.17	1890	4.15
December	4.43	12.34	1901	0.47	1965	4.87
Annual	48.36	73.87	1875	33.67	1930	53.21

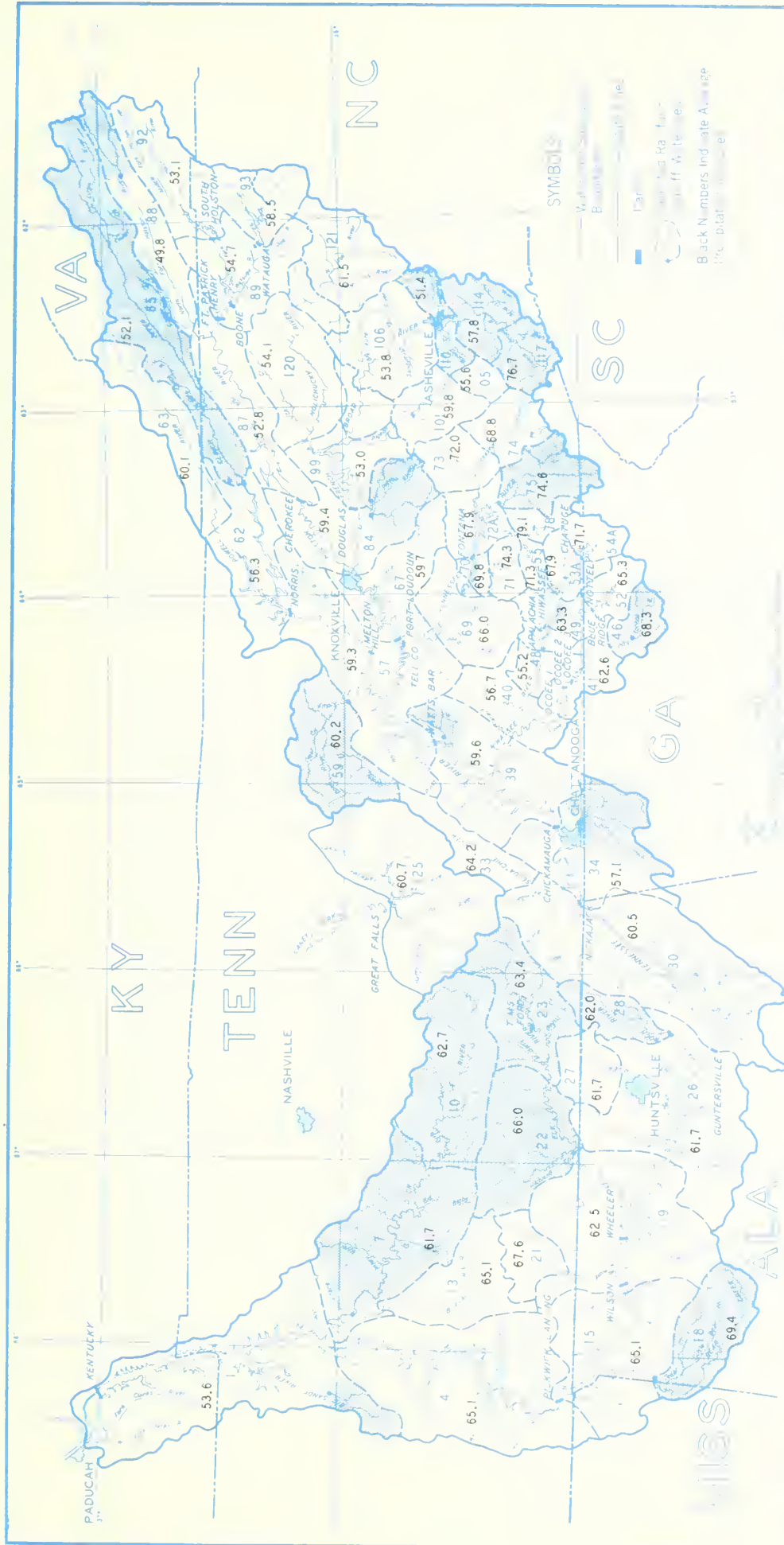


## AVERAGE PRECIPITATION ON WATERSHED SUBDIVISIONS

## 1974 MONTHLY AND ANNUAL

Subdivision	Average Precipitation - Inches											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Entire Tennessee River Basin	9.66	5.51	4.78	4.77	7.16	4.47	3.38	4.74	3.82	1.83	4.24	6.05
	4.99	5.08	5.50	4.47	3.95	3.91	4.81	3.88	3.43	2.75	3.99	4.78
Area Above Chattanooga	8.54	5.61	5.40	4.91	7.44	3.56	3.47	4.78	3.58	1.93	4.08	5.68
	4.65	4.83	5.31	4.19	3.86	4.17	5.27	4.17	3.46	2.91	3.77	4.51
Area Below Chattanooga	10.94	5.41	4.07	4.61	6.84	5.51	3.29	4.69	4.11	1.70	4.43	6.48
	5.36	5.35	5.72	4.79	4.05	3.62	4.28	3.54	3.39	2.57	4.24	5.10
French Broad Above Newport	6.04	5.22	4.63	5.66	7.11	4.53	4.17	6.97	3.74	1.63	3.75	4.50
	3.94	4.33	5.21	4.14	3.91	4.66	5.52	4.96	3.88	3.53	3.49	3.96
French Broad Above Douglas Dam	6.48	5.28	5.25	5.32	7.25	4.12	3.81	5.56	4.05	1.70	3.89	4.72
	3.98	4.31	4.98	3.98	3.81	4.34	5.30	4.49	3.56	3.16	3.42	3.87
Holston Above Cherokee Dam	7.00	4.31	5.62	3.99	7.14	4.88	2.87	3.47	4.01	2.15	3.34	4.69
	3.72	3.91	4.27	3.61	3.81	3.76	4.92	3.95	3.01	2.45	3.13	3.60
Holston and French Broad Above Knoxville	6.85	4.92	5.47	4.76	7.26	4.19	3.30	4.65	3.99	1.91	3.75	4.88
	3.94	4.22	4.72	3.83	3.80	4.09	5.14	4.23	3.30	2.85	3.35	3.81
Little Tennessee Above McGhee	10.38	7.57	5.28	6.65	8.74	4.01	4.82	6.11	3.00	1.98	4.90	7.07
	5.67	5.91	6.47	4.86	4.23	4.86	5.87	4.82	3.88	3.49	4.42	5.42
Little Tennessee Above Fontana Dam	10.25	7.80	4.84	7.47	8.93	4.20	4.90	6.81	2.94	2.00	4.85	6.73
	5.69	6.01	6.61	4.94	4.24	4.90	5.85	4.93	4.08	3.66	4.35	5.53
Clinch Above Norris Dam	8.52	4.17	6.01	3.86	7.82	4.02	2.53	3.83	3.91	2.34	3.63	4.44
	4.24	4.27	4.79	3.66	3.81	3.96	5.07	3.98	3.06	2.44	3.46	4.07
Hiwassee Above Charleston	9.88	7.32	4.13	6.12	6.79	3.04	5.01	5.92	2.30	1.63	4.32	6.66
	5.49	5.79	6.25	4.89	4.10	4.47	5.69	4.55	3.81	3.34	4.25	5.27
Hiwassee Above Hiwassee Dam	10.48	7.75	4.23	7.18	6.92	3.28	5.49	6.87	2.07	1.79	4.37	6.87
	5.51	5.86	6.32	5.02	4.20	4.73	6.00	4.76	3.89	3.44	4.18	5.26

Note: 30-Year Averages Based on Period, 1941-1970.

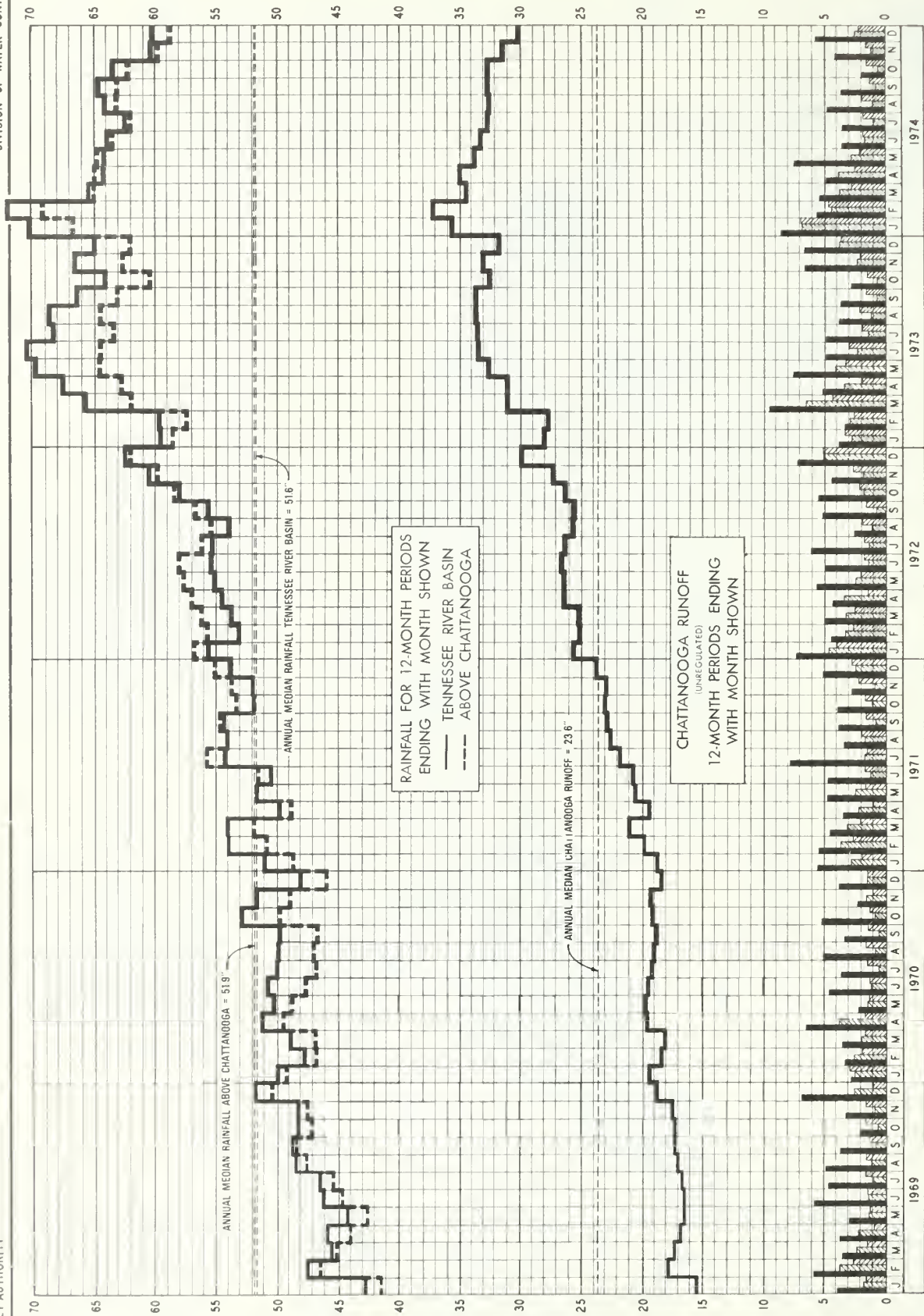


TENNESSEE VALLEY AUTHORITY  
 (ON FIVE) (Scale 1:100,000)

## AVERAGE PRECIPITATION ON WATERSHED SUBDIVISIONS YEAR 1974

INCHES OF RAINFALL OR RUNOFF

INCHES OF RAINFALL OR RUNOFF



SYMBOLS:

- MONTHLY RAINFALL ABOVE CHATTANOOGA
- MONTHLY RUNOFF AT CHATTANOOGA (UNREGULATED)
- ACTUAL MONTHLY RUNOFF AT CHATTANOOGA (REGULATED)

RAINFALL AND RUNOFF  
IN THE  
TENNESSEE RIVER BASIN



MONTHLY AND ANNUAL RAINFALL AND RUNOFF  
TENNESSEE RIVER ABOVE CHATTANOOGA, TENNESSEE

Drainage Area - 21, 400 Square Miles

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Annual</u>
	<u>Rainfall in Inches, 1890-1974</u>												
1974	8.54	5.61	5.40	4.91	7.44	3.56	3.47	4.78	3.58	1.93	4.08	5.68	58.98
Maximum	10.32	9.69	11.40	7.49	7.95	8.67	11.07	13.33	7.69	8.37	10.30	9.98	64.09
Minimum	1.42	0.85	1.37	0.95	0.80	1.73	2.02	1.25	0.77	0.04	0.44	0.54	37.23
Mean <sup>a</sup>	4.57	4.71	5.38	4.20	4.04	4.45	5.27	4.50	3.26	2.90	3.28	4.55	51.11
Median <sup>a</sup>	4.23	4.47	5.15	4.15	3.80	4.49	5.07	4.15	3.21	2.48	3.13	4.20	51.94

a. For Period 1890-1964.

	<u>Runoff in Inches, 1874-1974</u> (Unregulated)												
1974	6.73	4.44	3.74	3.85	2.80	1.69	0.97	1.03	0.81	0.61	1.15	2.47	30.29
Maximum	9.42	7.45	9.62	7.11	5.28	3.75	3.90	4.28	2.69	3.17	3.77	5.11	36.54
Minimum	0.50	0.62	1.30	1.01	0.61	0.50	0.45	0.26	0.21	0.30	0.30	0.41	11.22
Mean <sup>b</sup>	3.03	3.27	3.81	2.98	1.99	1.42	1.32	1.13	0.84	0.80	1.10	1.93	23.62
Median <sup>b</sup>	2.76	3.11	3.28	2.73	1.76	1.26	1.11	0.96	0.69	0.70	0.84	1.68	23.61

b. For Period 1874-1964.

	<u>Runoff in Cubic Feet Per Second, 1874-1974</u> (Unregulated)												
1974	125,000	91,400	69,500	73,900	52,100	32,400	17,900	19,100	15,600	11,400	22,000	45,900	48,020
Maximum	174,800	147,800	178,500	136,400	98,000	72,000	72,300	79,400	51,500	58,900	72,400	94,800	57,600
Minimum	9,200	12,700	24,100	19,400	11,300	9,600	8,300	4,760	3,990	5,510	5,800	7,700	17,690
Mean <sup>b</sup>	56,200	66,600	70,700	57,200	36,900	27,200	24,500	21,000	16,100	14,800	21,100	35,800	37,200
Median <sup>b</sup>	51,200	63,400	60,900	52,400	32,700	24,200	20,600	17,800	13,200	13,000	16,100	31,200	37,200

b. For Period 1874-1964.

RAINFALL AND RUNOFF DATA FOR SELECTED GAGED WATERSHEDS

<u>Stream</u>	<u>Station</u>	<u>Drainage Area sq. mi.</u>	<u>January 1 - December 31, 1974</u>			<u>Runoff in Percent of Rainfall</u>	<u>Rainfall Minus Runoff inches</u>
			<u>Rain- fall inches</u>	<u>Depar- ture<sup>a</sup> inches</u>	<u>Runoff inches</u>		
Big Sandy River	Bruceton	205	65.0	+13.3	32.4	50.0	32.6
Duck River	Hurricane Mills	2571	62.0	+10.9	30.5	49.0	31.5
Bear Creek	Bishop	667	69.4	+15.8 <sup>b</sup>	34.8	50.1	34.6
Elk River	Prospect	1784	64.8	+10.7 <sup>b</sup>	34.4	53.1	30.4
Paint Rock River	Woodville	320	62.0	+ 6.3	34.1	55.0	27.9
South Chickamauga Creek	Chickamauga	428	51.7	- 1.8	22.5	43.5	29.2
Toccoa River	Dial	177	70.5	+ 5.2	47.6	67.5	22.9
Sewee Creek	Decatur	117	57.2	+ 5.2	31.1	54.4	26.1
Emory River	Oakdale	764	60.2	+ 7.3	34.0	56.5	26.2
Clinch River	Tazewell	1474	52.1	+ 7.3	25.9	49.7	26.2
Little Tennessee River	Needmore	436	74.6	+12.3	42.9	57.5	31.7
North Fork Holston River	Saltville	222	46.4	+ 5.4	24.0	51.7	22.4
Little Pigeon River	Sevierville	353	63.9	+ 9.3	31.0	48.5	32.9
French Broad River	Asheville	945	61.9	+ 3.9	36.1	58.3	25.8

a. Rainfall and runoff departures are referred to the 30-year period 1941-1970.

b. Partially regulated.

Locations of watersheds are shown on map "Average Precipitation on Watershed Subdivisions." Runoff data are furnished by the U.S. Geological Survey and are tentative.

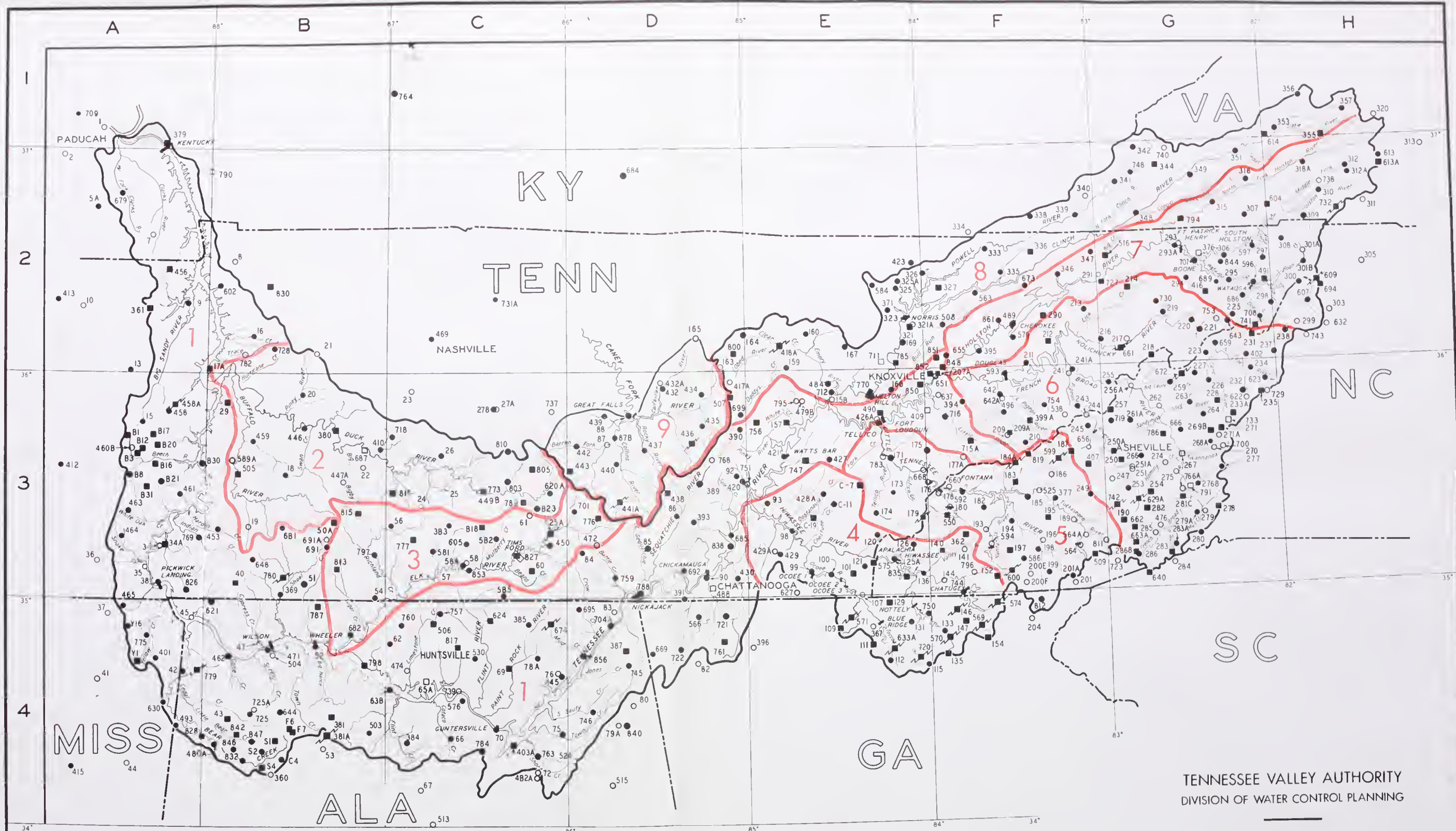


## EVAPORATION DATA—YEAR 1974

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Evaporation (Inches)	*	*	2.98	4.89	4.52	5.01	5.35	4.68	3.19	3.02	1.70	*
Murphy, North Carolina			2.92	4.82	4.87	5.50	5.91	4.43	3.49	2.86	2.14	
Jefferson City, Tennessee			3.51	5.50	5.19	5.89	6.26	4.86	3.39	3.30	2.35	
Pulaski, Tennessee			3.49 <sup>a</sup>	4.82 <sup>a</sup>	5.31 <sup>a</sup>	5.15	5.32 <sup>a</sup>	3.88 <sup>a</sup>	3.32	3.17	2.54	
Fletcher, North Carolina												
Precipitation (Inches)			3.34	7.28	6.44	2.26	5.44	7.62	1.72	1.34	4.40	
Murphy, North Carolina			5.61	4.29	7.96	1.72	2.72	5.07	5.09	2.34	4.21	
Jefferson City, Tennessee			3.15	4.65	7.66	10.04	2.58	6.46	4.36	1.94	4.46	
Pulaski, Tennessee			3.68	5.47	6.44	3.83	4.33	8.93	5.44	1.35	2.76	
Fletcher, North Carolina												
Average Air Temperature (Degrees F)			50 <sup>a</sup>	55	64	66	72	71	65	52	46	
Murphy, North Carolina			50	56	64	68	75	72	64	53	47	
Jefferson City, Tennessee			54 <sup>a</sup>	57	66	68	75	74	65	55 <sup>a</sup>	49 <sup>a</sup>	
Pulaski, Tennessee			49	54	62	64	68	67	62	49	43	
Fletcher, North Carolina												
Average Water Temperature (Degrees F)			57 <sup>a</sup>	62	73	76	81	80	73	59 <sup>a</sup>	-	
Murphy, North Carolina			55	61	71	74	81	79	71	59	50	
Jefferson City, Tennessee			59 <sup>a</sup>	62	73	77	84	81	70	58 <sup>a</sup>	52 <sup>a</sup>	
Pulaski, Tennessee			55	59 <sup>a</sup>	69	72	78 <sup>a</sup>	77	69	57 <sup>a</sup>	-	
Fletcher, North Carolina												
Average Relative Humidity (Percent)			78 <sup>a</sup>	73	83	83	88	94	93	80	80	
Murphy, North Carolina			81	70	82	80	81	86	88	76	77	
Jefferson City, Tennessee			80 <sup>a</sup>	71	81	81	80	84	88	78 <sup>a</sup>	80 <sup>a</sup>	
Pulaski, Tennessee			75	69	79	83	86	89	91	77	79	
Fletcher, North Carolina												
Average Wind Velocity (Miles Per Hour)			0.93	1.11	0.45	0.41	0.25	0.23	0.33	0.47	0.79	
Murphy, North Carolina			1.52	1.51	0.84	1.17	0.80	0.64	0.67	0.63	0.78	
Jefferson City, Tennessee			2.07 <sup>a</sup>	2.21	1.08	1.09	0.76	0.78	0.93	0.88	1.42	
Pulaski, Tennessee			1.91	2.11	1.20	1.14	0.77	0.66	0.94	1.28	1.84	
Fletcher, North Carolina												

a = Partial record

\* = Discontinued for winter season - January, February, and December



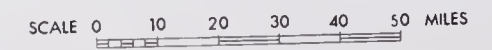
# LEGEND

T.V.A.	N. W. S. and Other Agencies
Nonrecording rain gages	○
Recording rain gages	■
Radio rain gages	■
Dams	—

Red numbers denote the respective tables  
in which records of rainfall stations  
within the areas shown are listed.

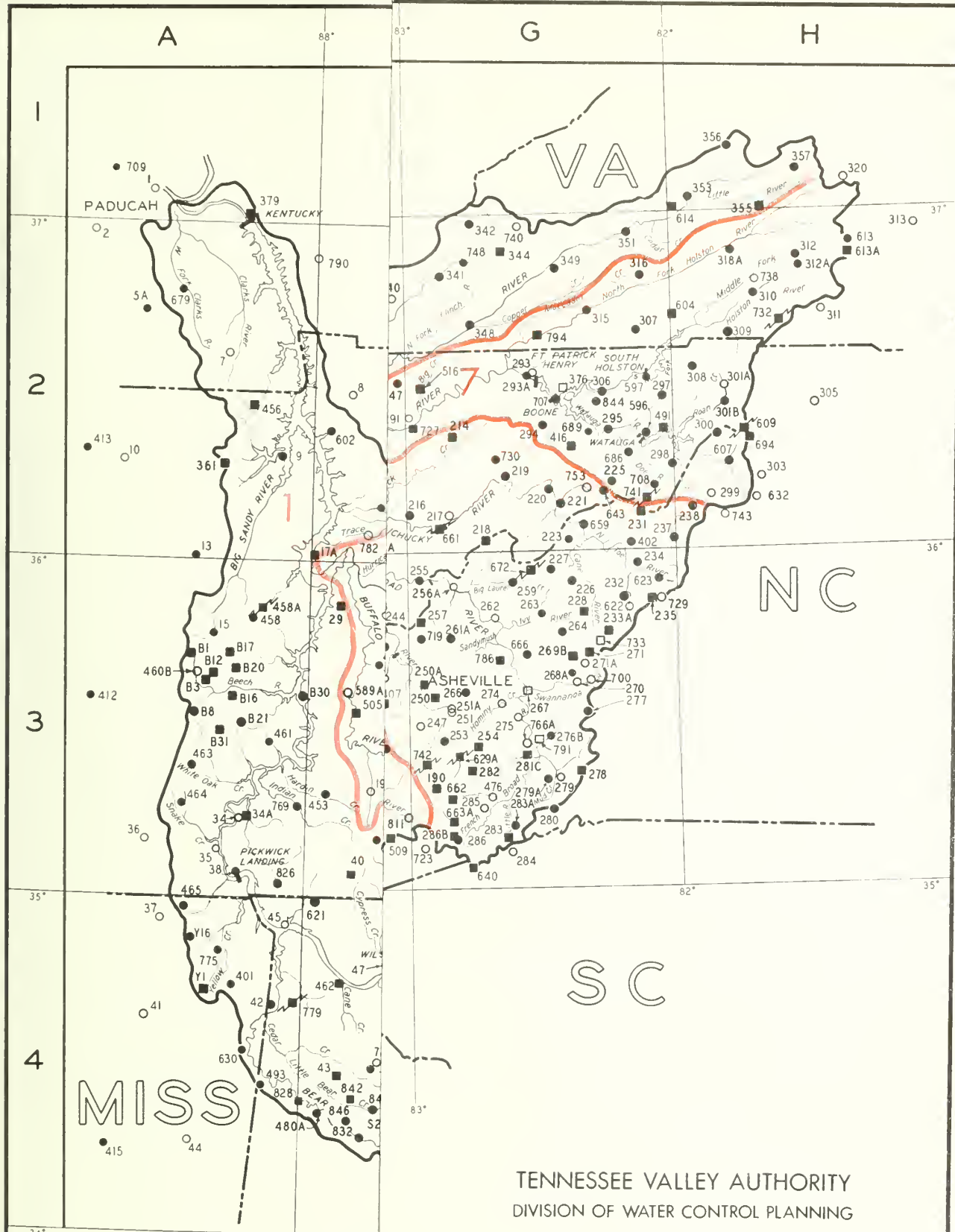
TENNESSEE VALLEY AUTHORITY  
DIVISION OF WATER CONTROL PLANNING

## TENNESSEE RIVER BASIN INDEX TO RAINFALL STATIONS



STATIONS AS OF JULY 1974





TENNESSEE VALLEY AUTHORITY  
DIVISION OF WATER CONTROL PLANNING

# TENNESSEE RIVER BASIN INDEX TO RAINFALL STATIONS

SCALE 0 10 20 30 40 50 MILES

STATIONS AS OF JULY 1974

Nonre  
Recor  
Radio  
Dams

Figures in the "mean or normal" column in the following tables are determined as follows: For the National Weather Service stations, the figures are normals based on the 30-year period 1941-1970, computed by the National Weather Service. For TVA and other agency stations with 30 or more years of record through 1970, the figures are means based on the 30-year period 1941-1970. For stations with less than 30 continuous years of record in 1970, the figures are running averages for the period of record. No means are listed for stations with records of less than 5 complete years.

TABLE 1  
PRECIPITATION  
IN  
WATERSHED SUBDIVISION NO. 1  
TENNESSEE RIVER AND MINOR TRIBUTARIES  
MOUTH TO KNOXVILLE

















TABLE 2  
PRECIPITATION  
IN  
WATERSHED SUBDIVISION NO. 2  
DUCK RIVER







TABLE 3  
PRECIPITATION  
IN  
WATERSHED SUBDIVISION NO. 3  
ELK RIVER









TABLE 4  
PRECIPITATION  
IN  
WATERSHED SUBDIVISION NO. 4  
HIWASSEE RIVER









TABLE 5  
PRECIPITATION  
IN  
WATERSHED SUBDIVISION NO. 5  
LITTLE TENNESSEE RIVER









TABLE 6  
PRECIPITATION  
IN  
WATERSHED SUBDIVISION NO. 6  
FRENCH BROAD RIVER









TABLE 7  
PRECIPITATION  
IN  
WATERSHED SUBDIVISION NO. 7  
HOLSTON RIVER









TABLE 8  
PRECIPITATION  
IN  
WATERSHED SUBDIVISION NO. 8  
CLINCH RIVER









TABLE 9  
PRECIPITATION  
IN  
WATERSHED SUBDIVISION NO. 9  
CANEEY FORK ABOVE GREAT FALLS DAM







TABLE 10  
PRECIPITATION  
UNCLASSIFIED STATIONS



OF A GREAT  
MOUNTAIN  
AND A GREAT  
VALLEY

DIVISION OF WATER CONTROL PLANNING

59





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